

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 705027	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/AU2003/001350	International Filing Date (day/month/year) 13 October 2003	Priority Date (day/month/year) 11 November 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ C08J 3/26; C08F 8/42; C08C 19/26, 19/36; A61B 19/04; A41D 19/015; A61F 6/04; A63H 27/10		
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1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheet(s).

3. This report contains indications relating to the following items:

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|------|-------------------------------------|---|
| I | <input checked="" type="checkbox"/> | Basis of the report |
| II | <input type="checkbox"/> | Priority |
| III | <input type="checkbox"/> | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| IV | <input type="checkbox"/> | Lack of unity of invention |
| V | <input checked="" type="checkbox"/> | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| VI | <input type="checkbox"/> | Certain documents cited |
| VII | <input type="checkbox"/> | Certain defects in the international application |
| VIII | <input type="checkbox"/> | Certain observations on the international application |

Date of submission of the demand 7 June 2004	Date of completion of the report 23 February 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer N.L. KING Telephone No. (02) 6283 2150

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed.
- ☒ the description, pages 1-7 and 9-23, as originally filed,
pages , filed with the demand,
page 8, received on 8 February 2005 with the letter of 8 February 2005
- ☒ the claims, pages 24-27, as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages , received on with the letter of
- ☒ the drawings, pages 1-2, as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	YES
	Claims 1-17	NO
Inventive step (IS)	Claims	YES
	Claims 1-17	NO
Industrial applicability (IA)	Claims 1-17	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

D1 WO 2002/038640
D2 WO 2000/021451
D3 US 3931085
D4 WO 2000/009590
D5 US 5670263

NOVELTY(N) Claims 1-7

Claim 1 defines a process for preparing a synthetic latex compound including the steps of:-

- (a) adding a polyvalent metal chemical to a synthetic carboxylated latex stabilised with a surfactant,
- (b) stirring the synthetic latex compound
- (c) diluting the synthetic latex compound to a predetermined total solids content, and
- (d) maintaining the synthetic latex compound at a temperature in the range 0 to 80°C.

Claim 5 defines a synthetic latex compound obtained by the above process.

Closely-related art appears in each of the above citations. In Example 1 of D1, a carboxylated latex is prepared from butadiene, acrylonitrile, methacrylic acid and acetoacetoxyethylmethacrylate. The latex is stabilised with the surfactant dodecylbenzene sulfonic acid and crosslinked with zinc oxide. The latex is diluted to a predetermined solids content of 35%. In a subsequent step the latex is conditioned overnight at 70°C. Thus all of the essential features of claims 1 and 5 are found in this example. Additional features defined in appended claims 2-4, 6 and 7 are also described in D1. Consequently, claims 1-7 lack novelty.

NOVELTY(N) Claims 8-17

Claim 8 defines a rubber article made from a composition containing synthetic carboxylated butadiene co-polymer latex and a polyvalent metal chemical as the sole crosslinking agent.

Claim 9 defines a similar rubber article with the additional feature that the composition contains a synthetic polymer latex.

Example 1 of D4 describes a rubber glove made from Synthomer 6000 (a carboxylated butadiene co-polymer latex) and a fluoroelastomer with zinc oxide as crosslinking agent.

Example 9 of D5 describes the use of a composition of styrene-butadiene latex and carboxylated styrene-butadiene latex in forming a rubber glove. Dipping in calcium nitrate solution provides a polyvalent metal chemical for crosslinking.

Additional features defined in dependant claims 10-17 are also to be found in the above citations.

Consequently, claims 8-17 lack novelty.

INVENTIVE STEP(IS) Claims 1-17

In view of the above, claims 1-17 also lack an inventive step when compared to D1-D5.

minutes and a novel synthetic latex composition for producing non-staining rubber articles such as a non-staining glove, condom, finger cot and balloon. Hereinafter, this specification will describe the processes for producing a non-staining glove from synthetic carboxylated latex compound according to the preferred embodiments and by referring to the accompanying drawings and the latex compound. However, it is to be understood that limiting the description to the glove and to the preferred embodiment of the invention and with reference to the accompanying drawings is merely to facilitate discussion of the present invention and it is envisioned that those skilled in the art may devise various modifications and equivalents without departing from the scope of the appended claims.

The invention as described hereinafter, describes processes for producing non-staining gloves, which are free from some if not all of the above-mentioned problems. The gloves may be produced from carboxylated synthetic co-polymers of butadiene, including carboxylated acrylonitrile butadiene latex, carboxylated acrylic butadiene latex, carboxylated chloroprene latex and other carboxylated synthetic polymers. The only essential component of the polymer structure for this invention is the presence of carboxylate groups, which are key to the cross-linking mechanism. Other structures in the polymer chain, such as chlorine, various acrylic groups or any other structure only serve to produce specific physical requirements. The preferred synthetic latex is carboxylated acrylonitrile butadiene latex and the inventors have evaluated most of the nitrile latices available commercially. Such commercial latices, are produced by an emulsion polymerisation process, incorporating only the three monomers, butadiene, acrylonitrile and acrylic acid or methacrylic acid. The acid component is necessary to introduce the carboxylate groups on the polymer chain. The inventors have established that this technology can be applied to all, but their evaluations have shown that all nitrile latices, even those having the similar levels of acrylonitrile/butadiene/carboxylic acid levels, can exhibit markedly different physical properties in the same formulation.